

AMENDMENTS TO THE CLAIMS

WHAT IS CLAIMED IS:

1. (CURRENTLY AMENDED) A semiconductor device comprising:
a semiconductor substrate;
a gate insulator formed on the substrate; and
a gate electrode having a metallic compound film, the gate electrode being formed on the insulator, wherein

~~: the metallic compound film in the gate electrode is formed by CVD using a material containing a metal carbonyl, and at least one of a Si-containing material and a N-containing material;~~

~~the metallic compound film contains the a metal in the metal carbonyl and at least one of Si and N[;], and~~

~~the content of at least one of Si and N in the metallic compound film is such that the work function of the metallic compound film is in the mid-gap of Si~~

~~the work function of the metallic compound film can be controlled by changing the content of at least one of Si and N in the metallic compound film.~~

2. (CURRENTLY AMENDED) The semiconductor device according to claim 1, wherein the metal ~~constituting the metal carbonyl~~ is selected from the group consisting of W, Ni, Co, Ru, Mo, Re, Ta, and Ti.

3-6. (CANCELED)

7. (ORIGINAL) The semiconductor device according to claim 1, wherein the metallic compound film is doped with an *n*-type impurity or a *p*-type impurity.

8. (ORIGINAL) The semiconductor device according to claim 1, wherein the gate electrode further comprises a silicon film formed on the metallic compound film.

9-14. (CANCELED)

15. (NEW) The semiconductor device according to claim 1, wherein the metallic compound film is used for a gate electrode of *p*MOS or *n*MOS of a MOS device.

16. (NEW) A method for manufacturing a semiconductor device including a gate electrode having a metallic compound film, the method comprising:

preparing a material containing a metal carbonyl, and at least one of a Si-containing material and a N-containing material; and

forming, by CVD using the prepared materials, the metallic compound film containing a metal in the metal carbonyl and at least one of Si and N;

wherein, by controlling film deposition conditions, the content of at least one of Si and N in the metallic compound film is adjusted such that the work function of the metallic compound film is in the mid-gap of Si.

17. (NEW) The method according to claim 16, wherein the metal constituting the metal carbonyl is selected from the group consisting of W, Ni, Co, Ru, Mo, Re, Ta, and Ti.

18. (NEW) The method according to claim 16, wherein the metal carbonyl is W(CO)₆.

19. (NEW) The method according to claim 16, wherein the Si-containing material is selected from the group consisting of silane, disilane, and dichlorosilane.

20. (NEW) The method according to claim 16, wherein the N-containing material is selected from the group consisting of ammonia and monomethyl hydrazine.

21. (NEW) The method according to claim 16, wherein the metallic compound film is formed by further using a C-containing material, and the metallic compound film contains the metal in the metal carbonyl, at least one of Si and N, and C.
22. (NEW) The method according to claim 16, wherein the metallic compound film is doped with an *n*-type impurity or a *p*-type impurity.
23. (NEW) The method according to claim 16, further comprising forming a silicon film on the metallic compound film.
24. (NEW) The method according to claim 21, wherein the C-containing material is selected from the group consisting of ethylene, allyl alcohol, formic acid, and tetrahydrofuran.
25. (NEW) The method according to claim 16, wherein the metallic compound film is used for a gate electrode of *p*MOS or *n*MOS of a MOS device.